PATENT CLAIMS

1. Method of measuring dose distribution in a phantom for radiation therapy treatment verification, wherein at least two detector planes are arranged in said phantom in a non-parallel manner, each plane being provided with a plurality of diode detectors, wherein said phantom is irradiated using a patient specific treatment, comprising the steps of

obtaining information regarding the dose distribution inside said phantom by performing measurements using said detectors;

dividing the measurements in time-intervals; and

using said information in the treatment verification.

2. Method according to claim 1, wherein the information obtained by means of said measurements is used for IMRT verification.

3. Method according to claim 1 or 2, wherein said irradiation of the phantom comprises delivering dose pulses, further comprising the step of synchronizing the measurements with said delivered doses.

4. Method according to claim 1, 2, or 3, further comprising the steps of: synchronizing the measurements with a respiratory cycle of the patient for which the patent specific treatment is intended; and determining the dose delivered in the various phases of the respiratory cycle.

5. Method according to any one of claims 1-4, further comprising the step of storing the data for each specific time-interval for measurements in said phantom.

6. Method according to any one of preceding claims, further comprising the step of calculating correction factors for each time-interval using said obtained information regarding the dose distribution inside said phantom.

7. Method according to claim 6, wherein the correction factors are calculated according to

$Corr_{n,\,f,\,seg\text{-}n,\,p,\,t(i),\,t(i+1)} = C_{dir} * C_{depth} * C_{pos}$

where

$Corr_{n,\,f,\,seg\text{-}n,\,p,\,t(i),\,t(i+1)}$ The correction factor to be used with detector element n, in the sub field f in the phantom, correcting the measured dose integrated from time t(i) until t(i+1) to achieve the dose in the point of location of detector n

C_{dir}	Factor correcting for any directional dependence in detector n
C_{depth}	Factor correcting for any depth (energy and/or dose rate) in detector n
C_{pos}	Factor correcting for any position (in primary beam, outside primary beam, edge of primary beam, etc.) dependency in detector n.

8. Method according to claim 6, wherein the correction factors are calculated according to

$Corr_{n,\,f,\,seg\text{-}n,\,p,\,t(i),\,t(i+1)} = C_{dir} + C_{depth} + C_{pos}$

where

$Corr_{n,\,f,\,seg\text{-}n,\,p,\,t(i),\,t(i+1)}$	The correction factor to be used with detector element n, in the sub field f in

	the phantom, correcting the measured dose integrated from time t(i) until t(i+1) to achieve the dose in the point of location of detector n
C_{dir}	Factor correcting for any directional dependence in detector n
C_{depth}	Factor correcting for any depth (energy and/or dose rate) in detector n
C_{pos}	Factor correcting for any position (in primary beam, outside primary beam, edge of primary beam, etc.) dependency in detector n.

9. Method according to any one of preceding claims, wherein the detector planes are arranged such that for each gantry angle projection, either of said non-parallel planes intersects with all parts of the radiation beam or sub-beams.

10. Method according to any one of the preceding claims , wherein each detector plane is provided with detectors having a thickness in a range less than the range of the electrons of the maximum energy in the range where the dependency is significant.

11. Detector configuration in a phantom suitable for radiation therapy, comprising at least two detector planes provided with a plurality of diode detectors for measuring irradiation in said phantom, said irradiation being delivered using a patient specific treatment, wherein said planes being arranged in a non-parallel manner, wherein said detectors has a thickness in a range less than the range of the electrons

of the maximum energy in the range where the dependency is significant.

12. Detector configuration according to claim 11, wherein said detector configuration is arranged for measurements of dose distribution in said phantom for IMRT verification.

13. Detector configuration according to claim 11 or 12, wherein said non-parallel planes are arranged such that, for each gantry angel projection, either of said planes intersects with all parts of the radiation beam or sub-beams.

14. Diode detector arranged with a thickness in a range less than the range of the electrons of the maximum energy in the range where the dependency is significant.

15. Diode detector according to claim 14, wherein said detector is used in a method according to claim 1-10 and/or in a detector configuration according to claim 11-13.

16. Diode detector according to claim 14, wherein said detector is used in water phantom dosimetry or in vivo dosimetry during Brachy therapy in Radio therapy.

17. Computer readable medium comprising instructions for bringing a computer to perform the steps of the method according to any one of the claims 1 to 10.